

REMARKS

Claims 1 and 3-6 are pending in the present application. By this reply, claim 2 has been cancelled. Claims 1 and 4 are independent.

Claim 2 has been rejected by the Examiner under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctively claim the subject matter which the Applicants regard as the invention. This rejection is respectfully traversed.

Although we do not agree with the Examiner's position concerning claim 2, since claim 2 has been cancelled from the present application, it is believed that this rejection has now been eliminated.

Claims 1, 2 and 4-6 have been rejected by the Examiner under 35 USC §102(b) as being anticipated by Simons et al., EP Patent No. 1,013,453 A2. This rejection is respectfully traversed.

The present invention according to an embodiment is directed to a method of controlling an inkjet printhead with a substantially closed duct in which ink is situated, said duct having an exit opening for the ink, which comprises actuating an electromechanical transducer so that the pressure in the duct changes in such a manner that an ink drop is ejected from the exit opening, said

pressure causing a deformation of the transducer, and after the end of the actuation, measuring an electrical signal generated by the transducer as a result of said deformation, wherein a subsequent actuation of the transducer is adapted to the measured electrical signal, while the printhead is in a printing mode for the image-wise printing of a receiving material.

The present method recognizes that a specific deviation in the duct influences subsequent actuations which follow on the occurrence of the deviation, and therefore possibly influence the drop-ejection process. According to the present invention, this influences compensated for by adapting the actuation to the specific deviation. The deviation is recognizable because it is manifested in the measured signal. Thus, for example, if a deviation has occurred which gives rise to a higher pressure in the duct, the actuation can be adapted by applying a lower voltage pulse. In this way, the net effect for reaching a specific pressure is still the same.

In rejecting the claims of the present application under 35 USC §102(b), as being anticipated by Simons et al., it is believed that the Examiner has misinterpreted the teachings of the referenced patent. The Examiner thus alleges that independent claims 1 and 4 are anticipated by the Simons reference because, as the Examiner alleges, the Simons reference discloses a printing apparatus comprising a printhead containing a control unit 31 to

adapt a subsequent actuation of the transducer 2 to a measured signal. However, in complete contrast to the Examiner's allegations, Fig. 3 of the Simons reference does not even show the existence of a control unit 31. In addition, the Examiner refers to column 4, lines 16-30 to show that the Simons reference teaches adapting a subsequent actuation of the transducer to the measured signal. However, in this paragraph, the Simons reference describes a system that merely allows the measurement of the electrical signal that is produced by the transducer as a result of vibrations present in the ink duct after the initial actuation of the transducer. However, the reference is completely silent on what, if anything, is done concerning the measurement of the electrical signal that is produced by the transducer.

With respect to the subsequent use of this measurement, the reference only describes that the measured signal is interpreted and that some action may follow this interpretation (see column 4, lines 30-33 of the reference). Thus, the Simons et al. reference is completely silent with respect to what actions are taken with respect to the measurement. In particular, the Simons reference does not mention or even remotely suggest the possibility of adapting a subsequent actuation of the transducer to the measured signal. To the contrary, the Simons reference is only directed to a method for detecting conditions as they exist in the ink ducts during normal printing (see column 1, lines 47-50) and, as such,

the reference does not address the Applicants' inventive contribution, that is, a subsequent actuation of the transducer is adapted to the previously measured signal, while the printhead is in a printing mode for image-wise printing of a receiving material. Thus, the referenced patent is directed to the early establishment of a breakdown of a duct so that a repair operation can be carried out before any visible artifacts have appeared in the image (see column 2, lines 16-20). Thus, the Examiner does not specifically recognize the Applicants' problem nor the Applicants' solution to such a problem.

Accordingly, the Simons reference does not anticipate each and every feature of independent claims 1 and 4, e.g. "a subsequent activation of the transducer is adapted to the measured signal" as recited in Claim 1 and "the printhead contains a control unit to adapt a subsequent actuation of the transducer to the measured signal" as recited in claim 4.

In view of the above amendments and remarks, reconsideration of the rejection and allowance of all the claims of the present application are respectfully requested.

It is noted, with appreciation, that the Examiner has indicated that claim 3 contained allowable subject matter and would be allowable if rewritten in independent form.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number of the below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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